

REMARKS

Applicants thank the Examiner for discussing the instant Application with Applicants' representative via teleconference, and for agreeing that the rejections of at least claims 6, 9, 11, 17 and 18 are invalid on their face for not including *Bartos et al.* as applied against independent claims 1 and 14. The instant Response is believed to reflect the matters discussed at the above teleconference, and therefore provides Applicants' statement of the substance thereof.

Status of the Application

Claims 1-20 are all the claims pending in the Application. Claims 1-4, 6 and 9-20 have been rejected. Claims 5, 7 and 8 are currently withdrawn from consideration.

Obviousness Rejections of Claims 1-4, 10, 12 and 13 Under 35 U.S.C. § 103(a)

The Examiner has rejected: (1) claims 1-4, 10, 12-14, 16 and 19 under 35 U.S.C. § 103(a) as being unpatentable over *Hayakawa et al.* (US 4,478,595; hereinafter "*Hayakawa*") in view of *Bartos et al.* (US 4,758,208; hereinafter "*Bartos*"); (2) claims 6, 9, 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over *Hayakawa* in view of *Trzmeil et al.* (US 5,606,941; hereinafter "*Trzmeil*"); and (3) claim 11 under 35 U.S.C. § 103(a) as being unpatentable over *Hayakawa* in view of *Foster et al.* (US 4,454,236; hereinafter "*Foster*"). These rejections are respectfully traversed.

Independent Claim 1

Regarding claim 1, the Examiner has repeated his allegation¹ that *Hayakawa* discloses all of the recited features, except that it “does not disclose said electric machine pulley being a generator.” (See Office Action, pg. 2). The Examiner then applies *Bartos*, taking the position that it discloses “an automatic belt tensioner for a combined starter generator mounted on a vehicle.” The Examiner proffers that it would have been obvious to modify *Hayakawa* in view of *Bartos* “to provide a single rotating electric machine pulley within said belt transmission apparatus to eliminate the need for two components.”

As an initial matter, Applicants disagree with the Examiner’s reading of *Hayakawa*. Specifically, claim 1 recites “a rotating electric machine pulley of a rotating electric machine for transmitting starting power to an engine.” *Hayakawa* provides no such feature, as none of the crankshaft 4, alternator 5, power steering pump 6, refrigerant compressor 7, or water pump 8 disclosed therein can reasonably be interpreted as being capable of “transmitting starting power to an engine.” In fact, since none of the elements 4-8 of *Hayakawa* is capable of transmitting starting power, the only reasonable interpretation of *Hayakawa* is an engine system that utilizes a conventional starter motor connected to the engine flywheel.

Additionally, Applicants respectfully submit that one of skill at the time of the invention would not have been motivated to modify *Hayakawa* in view of *Bartos*. Since (as discussed above) *Hayakawa* provides no feature capable of “transmitting starting power to an engine” through belt 2, it is clear that *Hayakawa* only comprehends a highly specialized system that

¹ From the April 22, 2003 Office Action.

adjusts tension of belt 2 to enable the crankshaft 4 to efficiently transmit engine power to drive alternator 5, power steering pump 6, refrigerant compressor 7, or water pump 8. In fact, *Hayakawa's* system is specifically provided to analyze the respective loads on elements 5-8, and to set a corresponding tension based upon torque requirements (see, *e.g.*, equation (4) in col. 8).

Thus, it is clear that *Hayakawa's* system is specifically provided for use in a belt system devoid of a starter.

Nevertheless, the Examiner seems to allege that one of skill would have been motivated to replace the alternator 3 of *Hayakawa* with the stargen 10 of *Bartos*.

However, incorporating the stargen 10 in the system of *Hayakawa* would completely change the function and operability of *Hayakawa*, as the highly specialized tension adjustment process of *Hayakawa* cannot reasonably be read as comprehending the use of a starter motor connected to belt 2.

Further, the specialized tension adjustment process of *Hayakawa* cannot reasonably be read as being capable of correcting the major drawbacks associated with the use of a stargen (see col. 1 of *Bartos*), such as the requirement that tension be applied in *varying* places along a belt.

Thus, Applicants respectfully submit that one of skill would not have modified *Hayakawa* as proposed by the Examiner, as it has long been held that, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) MPEP § 2143.01

In further support of Applicants' position that there would have been no motivation to modify *Hayakawa* in view of *Bartos*, Applicants respectfully submit that the Examiner has not explained *how* one of skill at the time of the invention would have accomplished such a modification.

Specifically, if alternator 5 of *Hayakawa* were simply replaced with stargen 10, the resultant structure would suffer from the drawbacks listed in *Bartos*. Specifically, there is no teaching or suggestion that tensioner 1 could operate on different slack sides of the belt in both a generating and a starting mode (see col. 1, lines 20-25 of *Bartos*). Thus, one of skill would not have made such a modification.

Alternatively, if one of skill replaced the alternator 5 with stargen 10 and the corresponding idler pulleys 40 and 42 to avoid the slack side problems discussed above, idler pulleys 40 and 42 would make the tensioner 1 of *Hayakawa* redundant, at least with respect to setting any tension at engine start (*i.e.*, one of the pulleys 40 or 42 would set the tension required for starting the engine).

Thus, for at least the above reasons, Applicants respectfully submit that independent claim 1 is patentable over the applied references. Further, Applicants respectfully submit that rejected dependent claims 2-4, 9-13, 19 and 20 are allowable, *at least* by virtue of their dependency.

Additionally, Applicants respectfully submit that at least dependent claims 2, 6, 9 and 11 are separately patentable over the applied references, for the reasons discussed in the sections below.

Dependent Claim 2

Applicants respectfully submit that, even if it would have been possible to modify *Hayakawa* in view of *Bartos*, even the resultant combination would fail to teach or suggest that the “tension adjuster is disposed in an area in which a slack of said belt occurring when said engine is started by said rotating electric machine becomes the greatest,” as recited in claim 2.

Specifically, as discussed above, *Hayakawa* fails to teach or suggest claim 1’s “rotating electric machine pulley of a rotating electric machine for transmitting starting power to an engine,” and therefore cannot reasonably be read as being concerned with placement of the belt tensioner 1 with respect to such a non-existent feature. Accordingly, belt tensioner 1 is simply provided between pulleys 6 and 7 (FIG. 1).

Accordingly, the secondary reference, *Bartos*, must teach or suggest both (1) the provision of a starter in *Hayakawa*; and (2) that the belt tensioner 1 of *Hayakawa* should somehow be moved so that it is arranged in a high slack area with respect to such a starter.

However, *Bartos* simply discloses stargen 10 used in conjunction with idler pulleys 40, 42 for alternating application of tension. *Bartos* fails to teach or suggest either (1) the use of; or (2) a suggested placement for, a variable belt tensioner, such as tensioner 1 of *Hayakawa*.

Thus, one of skill would not have been motivated to modify the position of tensioner 1 from its position between pulleys 6 and 7, and it would not be arranged “in an area in which a

slack of said belt occurring when said engine is started by said rotating electric machine becomes the greatest.”

Alternatively, if *Hayakawa* were modified to replace alternator 5 with both the stargen 10 and idler pulleys 40 and 42, the idler pulleys would render the tensioner 1 redundant, for the reasons discussed above with respect to claim 1. Applicants also note that, even if the tensioner 1 was provided in conjunction with pulleys 40, 42, the arrangement of pulleys 40, 42 would eliminate the possibility of arranging the tensioner 1 adjacent to stargen 10.

Dependent Claim 6

As an initial matter, Applicants point out that claim 6, which is dependent from independent claim 1, is only rejected in view of *Hayakawa* and *Trzmiel*. The Examiner has not applied *Bartos* against claim 6.

Accordingly, Applicants respectfully submit that the “rotating electric machine pulley of a rotating electric machine for transmitting starting power to an engine,” recited in independent claim 1 must be disclosed by *Trzmeil* to make this rejection proper. However, *Trzmeil* discloses no such feature, as it is directed to camshaft chains.

Accordingly, Applicants respectfully submit that the rejection of dependent claim 6 is invalid on its face.²

Additionally, Applicants respectfully submit that there would have been no motivation to modify *Hayakawa* in view of *Trzmeil*. The Examiner’s proffered reason, to make the positioning of the push rod more precise, is not supported by either reference. The Examiner has not

² The Examiner has agreed, in the teleconference referenced above, that this rejection is incorrect.

explained how the hydraulic system of *Trzmeil* would be in any way more precise than electrically based system of *Hayakawa*.

Further, the system of *Trzmeil* is specifically directed to a *two-way* adjuster, *i.e.*, the adjustment of a camshaft chain on both the upper and lower runs between outlet camshaft 1 and inlet camshaft 2. This complex system necessitates an arrangement wherein carriers 11 and 12 can be independently adjusted in opposite directions.

However, no such complicated system is required in *Hayakawa*. The system of *Hayakawa* is only directed toward the action of tensioner 1 on belt 2 in a single direction at a single location, and is thus considerably simpler than that shown in *Trzmeil*. The functionality provided by the highly complex system in *Trzmeil* would be unneeded by *Hayakawa*, and thus one of skill in the art at the time of the invention looking to improve *Hayakawa* would not have looked to *Trzmeil*.

Thus, as the reasons for modification proffered by the Examiner are unsupported, and as no reasonable reading of the references would support such a modification, Applicants respectfully submit that this rejection is invalid, as the Examiner must “show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for a combination in the manner claimed.” *In re Rouffet*, 47 USPQ2d 1453 (Fed.Cir. 1998). The mere fact that references can be “combined or modified does not render the resultant combination [or modification] obvious unless the prior art also suggests the desirability of the combination [or modification].” *In re Mills*, 916 F.2d 680 (Fed.Cir. 1990); MPEP §2143.01.

Dependent Claim 9

Applicants respectfully submit that the rejection of dependent claim 9 is facially invalid for the same reasons as discussed above with respect to claim 6, as the Examiner has not applied the *Bartos* reference against this claim.

Further, Applicants respectfully submit that one of skill in the art at the time of the invention would not have modified *Hayakawa* in view of *Trzmeil*, for at least the reasons discussed above with respect to claim 6.

Dependent Claim 11

As an initial matter, Applicants point out that claim 11, which is dependent from independent claim 1, is only rejected in view of *Hayakawa* and *Foster*. The Examiner has not applied *Bartos* against claim 11.

Accordingly, Applicants respectfully submit that the “rotating electric machine pulley of a rotating electric machine for transmitting starting power to an engine,” recited in independent claim 1 must be disclosed by *Foster* to make this rejection proper. However, *Foster* discloses no such feature, as it only shows pulleys connected to crankshaft 23, power steering pump 24, compressor 30, alternator 28 and air pump 26 (pulley 25 is not described, but does not appear to be capable of transmitting starting power).

Accordingly, Applicants respectfully submit that the rejection of dependent claim 11 is invalid on its face.³

³ The Examiner has agreed, in the teleconference referenced above, that this rejection is incorrect.

Additionally, Applicants respectfully submit that the Examiner's proffered reason for one of skill in the art to modify *Hayakawa* in view of *Foster* (i.e., to "adjust the positioning of the push rod so as to provide proper tensioning of said belt when said belt is in a starting mode") is unsupported.

Specifically, the system of *Hayakawa* is provided to adjust the tension on a belt during operation of the engine, to ensure optimal tension. In contrast, the system of *Foster* is provided to adjust the tension of a belt when the engine is not running. Thus, the systems have directly opposite goals, and the Examiner has not explained how one would have modified *Hayakawa* to include the features of *Foster*.

Further, Applicants respectfully submit that neither *Hayakawa*, *Foster*, nor any combination of the two references, teaches or suggests that "the position of said push rod is set by a signal from a central processing unit which processes information comprising, at least, an rpm of said engine, an engine starting signal, a vehicle speed, and the tension of said belt," as recited in claim 11.

As an initial matter, Applicants respectfully disagree with the Examiner's reading of *Hayakawa* with respect to this claim, as he has taken the position that *Hayakawa* discloses all of the features of claim 11, except that the position of the push rod is "based on an engine starting signal."

Specifically, Applicants respectfully submit that *Hayakawa* also fails to teach or suggest setting the position of the push rod in view of "a vehicle speed." Applicants note that the Examiner has taken the position that *Hayakawa* does disclose setting the position of a push rod

by an engine RPM, and that therefore the position of the push rod would inherently be adjusted based on vehicle speed. However, this assumption is incorrect. The speed of the vehicle can be zero while the RPM is varied. The speed of the vehicle may also vary without change in the RPM. In other words, there is no inherent direct relationship between vehicle RPM and speed.

Further, Applicants respectfully submit that *Foster* also fails to teach or suggest any tension adjustment based upon “vehicle speed,” as it is directed to a system that adjusts tension prior to engine start.

Independent Claim 14

Applicants respectfully submit that independent claim 14 is allowable for reasons similar to that discussed above with respect to independent claim 1, *i.e.*, that there would have been no motivation to modify *Hayakawa* in view of *Bartos*.

Thus, Applicants respectfully submit that independent claim 14 is patentable over the applied references. Further, Applicants respectfully submit that rejected dependent claims 15-18 are allowable, *at least* by virtue of their dependency.

Additionally, Applicants respectfully submit that at least dependent claims 17 and 18 are separately patentable over the applied references, for the reasons discussed in the sections below.

Dependent Claim 17

As an initial matter, Applicants point out that claim 17, which is dependent from independent claim 14, is only rejected in view of *Hayakawa* and *Trzmiel*. The Examiner has not applied *Bartos* against claim 17.

Accordingly, Applicants respectfully submit that the feature “wherein said belt transmits starting power from said rotating electric machine to said engine,” recited in independent claim 14, must be disclosed by *Trzmeil* to make this rejection proper. However, *Trzmeil* discloses no such feature, as it is directed to camshaft chains.

Accordingly, Applicants respectfully submit that the rejection of dependent claim 17 is invalid on its face.⁴

Additionally, Applicants respectfully submit that there would have been no motivation to modify *Hayakawa* in view of *Trzmeil*, for at least the reasons discussed above with respect to claim 6.

Dependent Claim 18

Applicants respectfully submit that the rejection of dependent claim 18 is facially invalid for the same reasons as discussed above with respect to claim 17, as the Examiner has not applied the *Bartos* reference against this claim.

Further, Applicants respectfully submit that one of skill in the art at the time of the invention would not have modified *Hayakawa* in view of *Trzmeil*, for at least the reasons discussed above with respect to claim 17.

Lastly, even if it were possible to modify *Hayakawa* in view of *Trzmeil*, Applicants respectfully submit that the resultant combination fails to teach or suggest the “holding tank” recited in claim 18.

⁴ The Examiner has agreed, in the teleconference referenced above, that this rejection is incorrect.

Conclusion

In view of the foregoing, it is respectfully submitted that claims 1-20 are allowable.
Thus, it is respectfully submitted that the application now is in condition for allowance with all of the claims 1-20.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Please charge any fees which may be required to maintain the pendency of this application, except for the Issue Fee, to our Deposit Account No. 19-4880.

Respectfully submitted,

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